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This article is about the ancient Greek manuscript. For other uses, see Physics (disambiguation).

Physics	
Author	Aristotle
Original title	Φυσικὴ ἀκρόασις (Physikē akroasis)
Language	Ancient Greek
Subject	Physics
Publication date	4th century BC
Publication place	Ancient Greece

Physics (Ancient Greek: Φυσικὴ ἀκρόασις, Physikē akroasis) is one of the oldest known texts on physics, a treatise by Aristotle (384–322 BC) in which he attempts to explain principles of change and motion in the world around him. Modern physics has developed in many ways from Aristotle's work, but in some cases it has moved in entirely new directions. Physics is one of Aristotle's most influential works, and was the standard physics textbook in Europe for nearly two thousand years.

Structure [edit]

As with other ancient Greek sciences, Aristotle's physics is a theoretical science, which aims to explain the world around us. Aristotle's physics is also a philosophical science, which uses philosophical reasoning to explain its principles. Physics is closely related to Aristotle's Metaphysics, which explains the relationship between matter and form, and between potentiality and actuality. Physics is also related to Aristotle's On the Heavens, which explains the motion of the heavenly spheres and the aether.

Physics is divided into eight books. Book I lays out the principles of nature, which Aristotle intends to explain. Book II explains the four causes, and distinguishes between natural and artificial objects. Book III explains the principles of motion, and defines terms such as infinity, place, void, continuity, and contact. Book IV explains Aristotle's theory of place. Book V explains the principles of change, and defines terms such as quality, quantity, and relation. Book VI explains the relationship between space, time, and motion. Book VII explains the principles of motion, and proves the existence of a prime mover. Book VIII explains the eternity of motion, and proves the existence of a prime mover.

Life [edit]

The Aristotle Fresco by Raphael (1509–1511) in the Apostolic Palace, Vatican City

Aristotle was born in Stagira, Chalcidice, about 384 BC. His father Nicomachus was the personal physician to King Amyntas of Macedon. Aristotle began his education at Plato's Academy in Athens when he was about eighteen years old, and he remained there for twenty years. He left Athens in 348 BC after Plato died, and travelled around the Aegean region for the next several years. In 343 BC he was hired by Philip of Macedon to tutor his son Alexander, who was then thirteen years old. Philip died in 336 BC, and Alexander succeeded him as King of Macedon. Aristotle returned to Athens, and founded his own philosophical school, the Lyceum. He remained there for the next twelve years, during which time he produced most of his philosophical works. He died in 322 BC, one year after Alexander.

Text [edit]

Physics, Book I, Bekker page 184a, Bekker line 10, in Greek majuscule script

Aristotle's Physics was probably written in his middle period, around 350 BC. The text is divided into eight books, which were probably originally written as eight separate papers. The Physics is one of Aristotle's most influential works, and was the standard physics textbook in Europe for nearly two thousand years. Its influence began to wane in the 16th century, when Galileo Galilei and Isaac Newton developed new theories of physics which were very different to Aristotle's.

The Physics was originally written in Ancient Greek. It was translated into Arabic by Hunayn ibn Ishaq (809–873) and into Latin by Gerard of Cremona (1114–1187). The Arabic translation was commented on by Averroes (1126–1198), and the Latin translation was commented on by Thomas Aquinas (1225–1274). The Physics was first printed in Venice in 1497, in a Latin translation by Thomas Aquinas. The first printed Greek edition was published by Aldus Manutius in 1497–1498.

Book I [edit]

Book I explains the principles of nature, which Aristotle intends to explain. Aristotle begins by criticising the Eleatic principle, which says that nothing can change. He argues that change is possible, and that it is necessary to explain it. He then criticises the Eleatic principle, which says that there is only one principle. He argues that there are at least two principles, and that there must be a third principle to explain change. He then criticises the Eleatic principle, which says that there is only one element. He argues that there are at least two elements, and that there must be a third element to explain change.

Book II [edit]

Book II explains the four causes. Aristotle begins by distinguishing between natural and artificial objects. He argues that natural objects have an internal principle of change, while artificial objects do not. He then explains the four causes: the material cause, the formal cause, the efficient cause, and the final cause. He argues that all four causes are necessary to explain change.

Book III [edit]

Book III explains the principles of motion, and defines terms such as infinity, place, void, continuity, and contact. Aristotle begins by defining motion as the actuality of the potential, insofar as it is potential. He then defines terms such as infinity, place, void, continuity, and contact. He argues that there is no infinite body, that there is no void, that place is not matter or form, and that continuity is the same as contact.

Book IV [edit]

Book IV explains Aristotle's theory of place. Aristotle begins by criticising the theories of his predecessors. He then argues that place is neither matter nor form, but is the boundary of the containing body. He argues that place is not void, that it is not matter or form, and that it is not the same as the thing contained.

Book V [edit]

Book V explains the principles of change, and defines terms such as quality, quantity, and relation. Aristotle begins by defining change as the actuality of the potential, insofar as it is potential. He then defines terms such as quality, quantity, and relation. He argues that there are three kinds of change: change in quality, change in quantity, and change in place.

Book VI [edit]

Book VI explains the relationship between space, time, and motion. Aristotle begins by defining time as the number of motion with respect to before and after. He then argues that time is continuous, that it is infinite, and that it is eternal. He argues that motion is continuous, that it is infinite, and that it is eternal.

Book VII [edit]

Book VII explains the principles of motion, and proves the existence of a prime mover. Aristotle begins by arguing that everything that is moved must be moved by something. He then argues that there must be a first mover, which is unmoved. He argues that the first mover must be eternal, and that it must be the cause of the eternal motion of the heavens.

Book VIII [edit]

Book VIII explains the eternity of motion, and proves the existence of a prime mover. Aristotle begins by arguing that motion is eternal, because it is impossible for it to have come into existence or to pass away. He then argues that there must be a first mover, which is unmoved. He argues that the first mover must be eternal, and that it must be the cause of the eternal motion of the heavens.

Reception [edit]

Depiction of Averroes in the fourteenth-century fresco The Triumph of Saint Thomas Aquinas by Andrea di Bonaiuto. Averroes's commentary on Aristotle's Physics was translated into Latin by Michael Scot. The portrayal of the latter out of the nineteenth century was by Gustave Boulanger.

Physics was widely read in the Middle Ages. Averroes's commentary on Aristotle's Physics was translated into Latin by Michael Scot. The portrayal of the latter out of the nineteenth century was by Gustave Boulanger.

The most famous nineteenth-century depiction of Physics was Jean-Léon Gérôme's Physics Before the Academy of Sciences, which was exhibited at the Salon of 1865. Gérôme's painting has been criticised for its lack of realism. Physics is depicted as a young woman, who is standing in front of a group of men. The men are wearing togas, and are holding books and scrolls. The painting is criticised for its lack of realism, because the men are not wearing togas in the fourth century BC. The depiction of Physics as a young woman is also criticised for its lack of realism, because Physics is a science, and is not typically depicted as a young woman.

In the twentieth century, Physics was the inspiration for the comedy Aristotle's Physics During Love by Alan Ayckbourn. The play is a farce, and is set in a contemporary setting. Several of the characters are named after characters in Aristotle's Physics, such as Eudoxia, Theophrastus, and Simplicius. The play is criticised for its lack of realism, because the characters are not typical of the fourth century BC.

Physics Before the Academy of Sciences by Jean-Léon Gérôme (1865)

Physics Before the Academy of Sciences, detail

Physics by Raphael Hoffmann (1878) in the Public Baths de Neptune, Montpellier

Jean-Léon Gérôme's Physics, a preparatory drawing for Physics Before the Academy of Sciences

Physics by Eudoxia Theophrastus, detail

Physics by Eudoxia Theophrastus

Notes [edit]

1. ^ Greek: Ἀκρόασις (akroasis) = "lecture".
2. ^ Scholars have suggested references for Physics from the 5th BC[1] or the 4th.[2]
3. ^ According to Aristotle's theory of the four elements, one was Empedocles' Strife.
4. ^ According to Aristotle's theory of the four elements, one was Empedocles' Love.
5. ^ Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife.
6. ^ Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife. Aristotle's theory of the four elements, one was Empedocles' Love.
7. ^ Aristotle's theory of the four elements, one was Empedocles' Strife. Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife.
8. ^ Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife. Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife.
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10. ^ Aristotle's theory of the four elements, one was Empedocles' Strife. Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife. Aristotle's theory of the four elements, one was Empedocles' Love. Aristotle's theory of the four elements, one was Empedocles' Strife. Aristotle's theory of the four elements, one was Empedocles' Love.

References [edit]

1. ^ Hett (Loeb 1936), p. 11
2. ^ Hett (Loeb 1936), p. 12
3. ^ Hett (Loeb 1936), p. 13
4. ^ Hett (Loeb 1936), p. 14
5. ^ Hett (Loeb 1936), p. 15